

REMARKS

Entry of the foregoing prior to examination on the merits is respectfully requested.

By the present amendment, claim 29 has been canceled without prejudice or disclaimer of the subject matter described therein. Claims 10, 11, 13, 30, 32, 33, 35 and 36 have been amended. The subject matter of claims 29 and 30 has been incorporated into the independent claims and claims 29 and 30 have been canceled and amended respectively. The amendment is made in accordance with the finality of the restriction requirement. Applicants reserve the right to file a divisional or continuation application directed to any subject matter that has been canceled by the present amendment.

Objections to the Specification

The Examiner has indicated that the disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. The Office Action refers to pages 15, 17, 28, 29, and 39. Applicants found embedded hyperlinks on pages 29 and 39. These hyperlinks have been converted to non-objectionable text by the deletion of "http://" in each instance. Pages 15, 17 and 28 contain references to web addresses. However these references do not constitute objectionable embedded hyperlinks or otherwise executable code as those references to web addresses do not comprise text in brackets "<>" or any computer executable code such as "http://." See, M.P.E.P. § 608.01(d).

Objections to the Claims

Claim 11 was objected to because the recitation "gene" is missing after the "said essential" in line 2. Claim 11 has been amended.

Claims 32-34 were objected to for being dependent on rejected claims. Claims 32-34 depend from claims 10, 13 or 35, which are believed to be allowable.

Indefiniteness Rejections

Claims 33-34 and 36 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite.

Claim 33 has been amended. The antecedent basis of the gene recited in claims 33-34 is clear.

Claim 36 has been amended. Applicants submit that a person of ordinary skill in the art would understand that the recitation of “essential gene sequences have a sequence identity of higher than 95%” in claim 36 as previously presented referred to an essential gene sequence appearing in a plurality of species such that, within the plurality, no two of the gene sequences were less than 95% identical. Claim 36 as amended recites “a sequence that targets an essential gene sequence or a portion thereof that is present identically or with a sequence identity of higher than 95 % in a plurality of plant sap-sucking insect species” which likewise refers to a sequence of an essential gene that is found in a plurality of plant sap-sucking insect species such that each sequence found within the plurality is 95% identical to the corresponding sequence in each of the other species.

Written Description Rejection

Claims 29-31 have been rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement.

The Examiner has alleged that the specification does not describe essential regions of the DNA of SEQ ID NO: 5, nor any polynucleotide sequence that has at least 70-90%

identity to SEQ ID NO:5 and being a target for controlling the pest, except for SEQ ID NO:5. In support of this contention, the Examiner has alleged that SEQ ID NOS: 5 and 6 are 95% identical but that injection of dsRNA of SEQ ID NO:6 does not result in higher mortality, citing page 33, Figure 1.

The Examiner seems to have wrongly interpreted the data in the examples on the sequence of SEQ ID No. 6. The data do not show mortality, but rather show nymph production. The nymphs recorded in Figure 1 are necessarily nymphs produced by any females surviving the treatment. The data do not show the number of aphids that have died as alleged in the Office Action.

By contrast, the specification teaches on page 35, second paragraph from the bottom, that: "A similar experimental setup with *M. persicae* aphids and a dsRNA based on the above *M. persicae* eIF1A sequence (SEQ ID NO:6) confirms that a significant mortality is obtained when feeding these aphids naked, unpackaged dsRNA molecules in their diet." On page 31 of the specification it is said that: "Injections of *M. persicae* with *M. persicae* eIF dsRNA also killed some aphids, but the mortality rates in this experiment did not appear to be significant when compared to GFP dsRNA- or buffer-injected controls (a large variation was observed in the controls and the treatment)." Hence, although some aphids were killed in this experiment, this particular injection test did not allow any conclusions to be made as to aphid mortality, given the large variation observed in the controls. But that does not mean that the dsRNA to the eIF1A of *M. persicae* does not bring about silencing of this gene, or cause mortality. Hence, from the application as filed it seems clear that the eIF1A sequence of SEQ ID No. 6 is indeed a useful sequence to target with RNAi constructs in *M. persicae*, to bring about a decreased growth, development, reproduction or survival of a plant sap-sucking insect as claimed.

Thus, both SEQ ID NO:5 and the similar SEQ ID NO:6 are both useful. The Examiner has cited *Lilly*, however the present facts may be distinguished so that *Lilly* is inapposite. The present claims are not directed to a genus of cDNAs defined only by sequence as in *Lilly*. Rather, the present claim are directed to sequences defined by degrees of variation from a reference sequence. Persons of ordinary skill in the art understand that dsRNA and siRNA sequences that target a gene can tolerate a degree of variation from the target sequence while retaining effectiveness for gene suppression purposes. Applicants have specifically provided 2 examples sequences in the range claimed. Thus, the claimed genus is commensurate with the scope of variations relative to a reference sequence that persons of ordinary skill in the art would expect to be well tolerated in dsRNA and siRNA, and would understand to be in the possession of anyone having described a reference sequence.

Enablement Rejection

Claims 29-31 have been rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for targeting gene of SEQ ID NO: 5, does not reasonably provide enablement for its homology or variants as claimed.

For the same reasons as above, the enablement rejection of claims 29-31 are not applicable to the claims as amended. The claims recite ranges of variations from SEQ ID NO:5 that those of ordinary skill in the art of dsRNA and siRNA would understand are likely to produce sequences that are effective at silencing an essential gene. If such gene is silenced, it will have an effect on insect growth, development, reproduction or mortality. The analysis of SEQ ID NOS:5 and 6 set forth in the Office Action appears to have misinterpreted the data as explained above.

Both treatments targeting SEQ ID NOS: 5 and 6 adversely affect the mortality of the sap sucking insects. The eIF1A gene has been shown to be a good target for gene silencing in sap-sucking insects. Hence, there is no reason to doubt that the claims are fully enabled commensurate in scope with the ranges of variations recited therein.

Obviousness Rejections

Claims 10-11, 13, 35 and 36 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tobias et al. (WO 01/37654). The rejection is traversed. Applicants position is that the Office Action has improperly focused on Tobias to the exclusion of the broader state to the art. When Tobias is considered in light of the accepted wisdom and the state of the art as a whole, which would have led away from the claimed invention, the invention as claimed could not have been obvious.

Nevertheless, without acceding to any allegation of the Office, features of claim 30, which was indicated to be free of the prior art have been incorporated into the independent claims. Thus, all the claims are now free of the prior art.

CONCLUSION

In view of the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order. Such action is earnestly solicited.

In the event that there are any questions relating to this application, it would be appreciated if the Examiner would telephone the undersigned concerning such questions so that prosecution of this application may be expedited.

The Director is hereby authorized to charge any appropriate fees that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: September 21, 2009

By: /Christopher L. North/
Christopher L. North
Registration No. 50433

Customer No. 21839
P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620